

## REMARKS

Claims 1-14 were examined in the outstanding final office action mailed on 09/13/2007 (hereafter "Outstanding Office Action"). Applicants note with appreciation that claims 5, 6, 12 and 13 were indicated to contain allowable subject matter. The remaining  
5 claims 1-4 and 7-11 and 14 were rejected.

By virtue of this paper, claims 1, 4, 8, 11 and 14 are sought to be amended and new claims 15-18 are sought to be added. The amendments and additions are believed not to introduce new matter and their entry is respectfully requested. The amendments and additions  
10 are made without prejudice or disclaimer. Claims 1-18 are thus respectfully presented for reconsideration further in view of the below remarks.

### *Claims Objections*

In Page 2 paragraph 1 of the Outstanding Office Action, claim 1 was objected to  
15 noting that the term "OLE\_LINK1" seems to be a typographical error. Claim 1 is sought to be amended to remove the term, as suggested. Applicants thank the Examiner for noting the error. Withdrawal of the objection with respect to claim 1 is respectfully requested.

### *Claim Rejections - 35 U.S.C. § 102*

In pages 2-4 paragraphs 4 and 5 of the Outstanding Office Action, claims 1-4, 7-11  
20 and 14 were rejected under 35 U.S.C. 102 (b) as being anticipated by U.S. Patent No. 3,826,904 issued to Leonard *et al* (hereafter "Leonard").

Without acquiescing to the Examiner's contentions, it is asserted that the presented  
25 claims are allowable over Leonard.

Broadly, it is first asserted that Leonard neither recognizes the problem recited in the independent claims nor teaches the specific technique claimed to address the recited problem.

With respect to the problem, currently amended independent claim 1 relates to a  
30 situation in which a first component is unavailable for blending for a substantial duration after the start of blending. The objective is to determine how to blend the components taking

advantage of the fact that each component blended can impact multiple properties of the product sought to be produced, and each property is in turn impacted by multiple components.

With respect to the solution, a digital processing system determines an intermediate  
5 blend point such that the available components (i.e., not including the first component noted  
above) can be blended up to the intermediate blend point such that (an intermediate product  
with) an intermediate properties combination is attained. Since the first component is (would  
be) available at the intermediate blend point, the digital processing system further determines  
the manner in which the components (including the first component) can be further blended  
10 (continuing with the intermediate product), which would produce the desired aggregate  
volume of the product with the desired target properties.

The flow rates of the components are thereafter controlled differently before and after  
the intermediate blend point consistent with the determination of the digital processing system  
15 to produce the desired aggregate volume of the product with the desired target properties.

At least the portions of Leonard relied upon in the Outstanding Office Action neither  
teach nor reasonably suggest several features of amended claim 1.

20 For example, currently amended independent claim 1 recites that a first component is  
scheduled to be **available for blending only after substantial continuous duration from  
start of blending** and the claimed solution is around this problem. The substantial continuous  
duration corresponds to the time interval between points A and 650 in Figure 6 of the subject  
application in the example there. The invention is applicable only when the first component is  
25 unavailable for such extended amount of time (in contrast to the unavailability caused merely  
for flow control, as appears to have been equated by the Examiner in the Outstanding Office  
Action).

Leonard does not contemplate such a problem/situation. In support of this assertion,  
30 Applicants first point to the portion of Leonard (equivalent text copied from the US Patent  
Database) relied upon in the Outstanding Office Action (see page 3 lines 12-20 of the  
Outstanding Office Action) to disclose the related feature:

Direct current voltages i.e., B through  $V_F$ , provided by a  
conventional type direct current voltage source not shown,

correspond to predetermined quantities of base oil A for different blend oils. For a count of one, electronic switch 40 receiving voltage  $V_B$  is activated by pulse  $E_A$  from programmer 14, to provide voltage  $V_B$  as signal  $E_2$ . Similarly, pulse  $E_A$  causes signal means 14A, 14B, 14C to provide other direct current voltages corresponding to the quantities of base oils B & C standard the additive necessary for that particular blend oil to be provided as signals  $E_{2A}$ ,  $E_{2B}$  and  $E_{2C}$ . Similarly, pulses  $E_B$ ,  $E_C$ ,  $E_D$  the range and  $E_E$  will render switches 40A, 40C and 40D, respectively, conductive in turn to provide direct current voltages  $V_C$  through  $V_F$  respectively as base oil A quantity signal  $E_2$ . In a similar manner signal means 14A, 14B, 14C are also controlled to provide corresponding direct current voltages so that at any one time signals  $E_2$  through  $E_{2C}$  correspond to quantities of base oil A, B and C and the additive required to make a particular blend oil. In essence, signal means 14, 14A, 14B, and 14C, along with the voltage source, comprise memory means storing signals corresponding to quantities of base oils A, B and C and the additive for different blend oils.  
(Col. 6 lines 26-50 of Leonard)

From the above, it is believed that the Examiner equates controlling the flow of various base oils as inherently disclosing the claimed availability of the first component.

However, currently amended claim 1 recites that the first component is scheduled to be **available for blending** only at a time instance **which is after a substantial continuous duration from start of blending**.

In sharp contrast, in the context of the flow control of Leonard noted above, the components are **always available for blending**, but not permitted to be used for blending. Even if the Examiner interprets the flow control as inherently teaching the claimed scheduled availability, it should be appreciated that such availability would be for a short time and not for the claimed **substantial continuous duration** after starting blending. It is therefore concluded that Leonard does not anticipate the claimed feature noted above.

Furthermore, Leonard does not teach or reasonably suggest the claimed determination of **an intermediate blend point which is at or after the scheduled availability of the first component** with corresponding intermediate properties combination, which further lends to blending to meet the eventual desired target properties while meeting the aggregate volume requirement.

Currently amended independent claim 1 is allowable over Leonard at least for one of the reasons noted above.

Claims 2-7 depend from claim 1 and are allowable at least for the reasons noted above  
5 with respect to claim 1.

Currently amended independent claim 4 is independently allowable in reciting the determining of a first plurality of flow rates used for controlling the flow rates of the available components before the intermediate blend point and a second plurality of flow rates for  
10 controlling the flow rates of the components after the intermediate blend point.

It is first noted that Leonard also teaches flow rates, and in that regard discloses:

Referring to FIG. 1, base oils A, B and C from storage facilities (not shown) are provided to a blending tank 1 through  
15 lines 2, 3 and 4. For convenience, the following example disclosing the present invention will show the use of three base oils, although there is no restriction on the number of base oils that may be blended in tank 1 to provide a blend oil. **The flow rate of a base oil is directly related to the quantity of that base oil in the final blend oil.** The flow rate of the base oil A in line 2 is controlled by a valve 6 receiving a signal from a flow recorder controller 8. Flow recorder controller 8 receives a signal corresponding to the flow rate of base oil A in line 2 from a flow rate sensor 10. The set point of flow rate controller  
20 8 is positioned to a desired flow rate, as hereinafter described, which will provide the desired portion of base oil A for a desired blend oil in blending tank 1. Flow recorder controller 8 provides the signal to valve 6 in accordance with the difference between the flow rate signal from sensor 10 and the position of its set point so that the flow rate in line 2 assumes the desired flow rate.  
25 (Col. 4 lines 63-69 and Col. 5 lines 1-14 of Leonard **Emphasis Added**)

35 The flow rate of Leonard is accordingly believed to be fixed and related only to the final blend oil.

It is therefore asserted that Leonard does not teach or reasonable suggest the claimed first plurality of flow rates and a second plurality of flow rates used in respective phases of  
40 the blending.

Currently amended claim 4 is accordingly independently allowable over the art of record.

*Conclusion*

Thus, all the objections and rejections are believed to be overcome and the application is believed to be in condition for allowance. The Examiner is invited to telephone the undersigned representative at 707.356.4172 if it is believed that an interview might be useful for any reason.

Respectfully submitted,  
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Signature

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